

WHAT IS CLAIMED IS:

1. A flip chip mounting method comprising the steps of:
 - (a) preparing a chip including a pad covered with an insulation film;
 - 5 (b) selectively removing said insulation film over said pad to expose said pad;
 - (c) after said step (b), forming a polyimide film including a first opening for exposing said pad, on said insulation film;
 - (d) filling said first opening to form a solder bump on said pad; and
 - (e) filling an underfill resin between an assembly substrate and said chip, for
 - 10 bonding said assembly substrate and said chip with said solder bump interposed therebetween.

2. The flip chip mounting method according to claim 1, wherein
said chip prepared in said step (a) further includes a fuse covered with said
15 insulation film,
said step (b) further includes the step of selectively removing said insulation film above said fuse, and
said polyimide film formed in said step (c) further includes a second opening formed above said fuse.

- 20 3. The flip chip mounting method according to claim 2, wherein
said insulation film is a passivation film in which an oxide film and a nitride film are stacked in this order, and
said step (b) includes the steps of:
25 (b-1) selectively removing said nitride film above said pad and selectively

removing said nitride film above said fuse; and

(b-2) after said step (b-1), selectively removing said oxide film above said pad, for exposing said pad.

5 4. The flip chip mounting method according to claim 2, wherein
said insulation film is a passivation film in which an oxide film and a nitride film are stacked in this order,

said nitride film and oxide film over said pad are selectively removed in said step (b), and

10 said flip chip mounting method further comprising the step of

(f) after said step (c), selectively removing said nitride film above said fuse using said polyimide film as a mask.

15 5. The flip chip mounting method according to claim 2, wherein
said insulation film is a passivation film in which an oxide film and a nitride film are stacked in this order, and

said step (b) further includes the steps of:

(b-3) selectively removing said nitride film and oxide film over said pad, for exposing said pad; and

20 (b-4) selectively removing said nitride film above said fuse using a mask which covers said pad as exposed.